EMERGENCE IN INTERACTIVE ART

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CERTIFICATE OF AUTHORSHIP/ORIGINALITY

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

Jennifer Seevinck

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ABSTRACT

This thesis is concerned with creating and evaluating interactive art systems that facilitate emergent participant experiences. For the purposes of this research, interactive art is the computer based arts involving physical participation from the audience, while emergence is when a new form or concept appears that was not directly implied by the context from which it arose. This emergent 'whole' is more than a simple sum of its parts. The research aims to develop understanding of the nature of emergent experiences that might arise during participant interaction with interactive art systems. It also aims to understand the design issues surrounding the creation of these systems.

The approach used is Practice-based, integrating practice, evaluation and theoretical research. Practice used methods from Reflection-in-action and Iterative design to create two interactive art systems: *Glass Pond* and *+-now*. Creation of *+-now* resulted in a novel method for instantiating emergent shapes. Both artworks were also evaluated in exploratory studies. In addition, a main study with 30 participants was conducted on participant interaction with *+-now*. These sessions were video recorded and participants were interviewed about their experience. Recordings were transcribed and analysed using Grounded theory methods. Emergent participant experiences were identified and classified using a taxonomy of emergence in interactive art. This taxonomy draws on theoretical research.

The outcomes of this Practice-based research are summarised as follows. Two interactive art systems, where the second work clearly facilitates emergent interaction, were created. Their creation involved the development of a novel method for instantiating emergent shapes and it informed aesthetic and design issues surrounding interactive art systems for emergence. A taxonomy of emergence in interactive art was also created. Other outcomes are the evaluation findings about participant experiences, including different types of emergence experienced and the coding schemes produced during data analysis.